A-1 B-52c/char

SERVICE



Standard Aircraft Characteristics

BY AUTHORITY OF THE SECRETARY OF THE AIR FORCE

1551

B-52C&D

EIGHT J57-P-19W, or 29WA PRATT & WHITNEY

STRATOFORTRESS

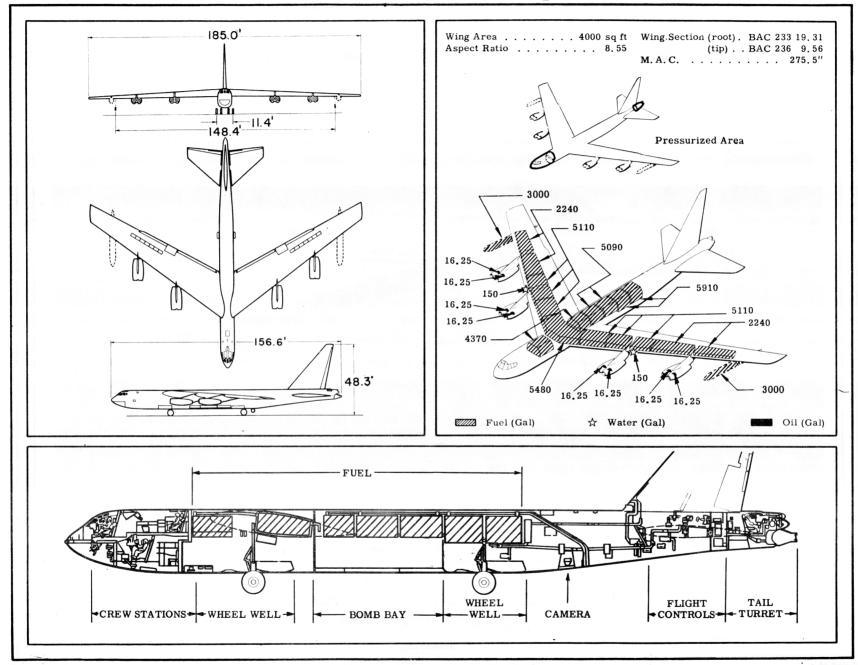
Boeing

24 MAR 58

CLASSIFICATION CANCELLED

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B-52C & D



B-52C&D

POWER PLANT

Nr & Model (8) J57-P-19W. Mfr Pratt & Whitney Engine Spec Nr A-1649G Type Axial Weight (dry) . (J57-P-19W) 3970 lb Tail Pipe Fixed Area Augmentation Water

Note: At present there are no requirements for ATO

J57-P-29WA engine . . . 4150 lb

ENGINE RATINGS

S. L. Static LB - **RPM - MIN

*12,100 - 6450/9900 - 5

Mil: 10.500 - 6150/9900 - 30

Nor: 9000 - 5900/9650 - Cont

*Wet

**First figure represents low pressure spool; second figure represents high pressure spool.

CONFIDENTIAL Breeze for god www. MS Mission and Description

Navy Equivalent: None

464-201-6 (B-52C)

The principal mission of the B-52C aircraft is the destruction of sur-

Characteristics and performance for the B-52D are similar to the B-52C except the B-52D does not have the reconnaissance capsule conversion provision.

The normal crew of six consists of pilot, co-pilot, (2) bombardiernavigators, ECM operator and tail gunner.

Automatic cabin pressurization, heating and ventilation are provided for crew comfort during normal and combat operation.

Ejection seats for emergency escape are afforded the crew except for the tail gunner who bails out after jettisoning the tail section containing the gun turret.

Flight control, throughout the speed range from limit dive speed to landing speed is accomplished by use of spoilers and ailerons on the wing: elevators on an all-movable horizontal tail: and a rudder on a fixed vertical tail surface. The spoilers also function as air brakes used in landing.

Air is bled off the engines for thermal anti-icing of the wing and tail surface leading edges.

Other features are single-point ground and air refueling, braking parachute for decreasing landing roll distance, and a crosswind landing gear to aid in cross-wind take-off and landing. The airplane utilizes the A-14 Auto-Pilot and the N-1 Compass.

The B-52C & D differ from the B-52's with the -19W engines by an increase in fuel tank capabilities. See Note (c) page 6

Development

											B-52C		B-52D
Design Initiated:											Dec 53		Dec 53
First Flight:											Mar 56		Aug 56
First Delivery to	S	AC	:	•	•	•	•	•	•	•	June 56	• • • • • • • •	June 56

WEIGHTS

Loading Lb	L.F.
Empty 164, 486 (C)	
Basic 167, 920 (C)	
Design †453,000	. 2.0
Combat *283, 100	. 2.4
Max T.O $**450,000$	2.0
Max In-Flt \$450,000	. 2.0
Max Land. 270,000	

(C) Calculated

F

* For Basic Mission

** Excludes 2500 lb water † Max taxi wt, 10,000 lb bomb

† Limited by structure

TI E

Location Nr Tanks Gal
Wg, outbd 2 4480
Wg.ctr 1 5480
Wg, inbd* 4 10,220
Fus, fwd* 2
Fus, ctr* 1 5090
Fus, aft* 5910
Wg.drop 2 6000
Total 41,550
GradeJP-4
Specification MIL-F-5624
Nacalla OIL
Nacelle 8 (tot) 130
Specification MIL-L-7808A
WATER
Wg, L.E 2 300
*Self-Sealing

DIMENSIONS

Wing		
Span	.	.185.0
Dihedral (chor	d plane)	2 ⁰ 30
Incidence (roo	t)	6
Sweepback (LE	2)	. 36 ^o 58
Length	· • • • • •	. 156.6
Height (overall)		. 48.3
Height (fin folde	d)	. 20.8
Tread (outrigger	r)	.148.4
Tread (main gea	r)	. 11.4

M B S

Nr	Class (lb)
27	New Series (Family of Clusters)1000
	Special Weapons MK-6
Max	Bomb Load (1) 43,000

Note: Structural provisions for 50,000 lb bomb; space and structural provisions for XB-63

N G U S

Nr	Type	Size Rds e	ea Loc
4.	M-3	.50600 .	ea Loc . Tail, tur

CAMERAS

Nr	Type Lens
	K-3836"
1	K-22 6"
	or
1	K-17D 6"
1	O-15 Radar Recording

ELECTRONICS

UHF Command	. AN/ARC-34
Liaison	AN/ARC-21X
IFF	AN/APX-25
Radar Beacon	
ECM Trans (2)	AN/APT-6
ECM Trans (1)	AN/APT-9
ECM Trans (2)	AN/ALT-7
ECM Receiver (1) .	AN/APR-14
Interphone	. AN/AIC-10
Bombing Sys	MA-6A
Nav Recv'r	AN/ARN-14
Fire Control Sys	*
-	

See page 6 for additional equipment. * A-3A utilized in "C" airplane MD-9 utilized in "D" airplane

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B-52C & D

CONDITIONS		BASIC MISSION	DESIGN MISSION	MAX BOMB MISSION	F E R R Y R A N G E	
		I	11	111	IV	
TAKE-OFF WEIGHT Fuel at 6.5 lb/gal (grade JP-4) Payload (Bombs) Wing loading Stall speed (power off) Take-off ground run at SL Take-off to clear 50 ft Rate of climb at SL Rate of climb at SL (one engine out) Time: SL to 20,000 ft Time: SL to 30,000 ft Service ceiling (100 fpm) Service ceiling (one engine out) 2	(lb) (lb) (lb) (lb/sq ft) (kn) (ft) (ft) (fpm) (fpm) (min) (min) (ft) (ft)	450,000 267,140 10,000 112.5 147 8000 10,300 2225 2440 10.8 18.0 37,550 37,050	450,000 268,540 8600 112.5 147 8000 10,300 2225 2440 10.8 18.0 37,550 37,050	450,000 233,315 43,000 112.5 147 8000 10,300 2225 2440 10.8 18.0 37,550 37,050	442,935 (8) 270,075 (8) None 110.7 146 7690 9950 2270 2480 10.5 17.6 37,900 37,400	
COMBAT RANGE (4)	(n, mi)	and the state of t	t die lane dae lakeigene albe al www.harata.		6825	
Average cruise speed Initial cruising altitude Target speed Target altitude Final cruising altitude Total mission time	(n, mi) (kn) (ft) (kn) (ft) (ft) (ft) (hr)	3305 453 33,500 476 45,000 50,750 14.66	3325 453 33,500 476 45,050 50,750 14.75	2835 453 33,500 476 43,950 50,850 12,57	453 33,800 50,750 15.10	
COMBAT WEIGHT Combat altitude Combat speed Combat climb Combat ceiling (500 fpm) Service ceiling (100 fpm) Service ceiling (one engine out) Max rate of climb at SL Max speed at optimum alt Basic speed at 35,000 ft	(1b) (ft) (kn) (fpm) (ft) (ft) (ft) (fpm) (kn/ft) (kn)	283,100 45,000 495 775 46,350 46,950 45,300 5310 551/20,200 520	283,900 45,050 495 770 46,250 46,900 45,250 5300 551/20,200 520	266,000 43,950 505 1210 47,500 48,100 46,500 5720 552/20,350 521	188,500 50,750 507 1210 54,650 55,500 53,500 8270 553/20,500 525	
ANDING WEIGHT Ground roll at SL Ground roll (auxiliary brake) (5 (10) Total from 50 ft (10) Total from 50 ft (auxiliary brake) (6 (10)	(1b) (ft) (ft) (ft) (ft)	188,300 2250 2020 4270 4040	188,400 2250 2020 4270 4040	187,500 2230 2000 4250 4010	188,500 2250 2020 4280 4050	

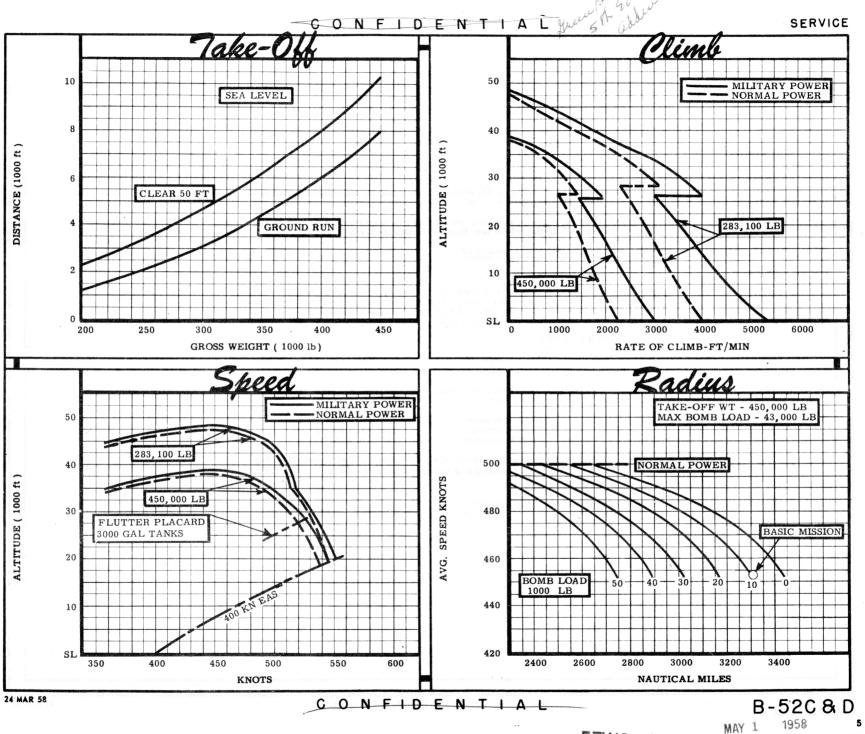
N	① Take-off power ② Military power ③ Normal power
Ö	(2) Military power
ř	3 Normal power

The power of the p

⁶ With drag chute
7 Excludes 2500 lb water
8 Limited by fuel capacity
9 Initial buffet, flaps down, S.L.
10 Braking force limited to 40,000 lb

PERFORMANCE BASIS:

(a) Data source: Flight test
(b) Performance is based on powers shown on page 3.



57WC 4984

533

FORMULA: RADIUS MISSIONS I. II & III

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Climb so as to reach cruise ceiling 15 minutes from target. Run in to target at normal power, drop bombs, conduct 2 minutes evasive action and 8 minutes escape at normal power. Cruise back to base at long range speed and optimum altitudes; as an alternate, a 45,000 foot ceiling may be maintained on the return leg with no radius penalty. Range-free allowances are fuel for 5 minutes at normal power for take-off, fuel for 2 minutes at normal power for evasive action, and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

FORMULA: RANGE MISSION IV

Take-off and climb on course to optimum cruise altitude at normal power. Cruise out at long range speed, increasing altitude with decreasing weight; external tanks are dropped when empty. Land at remote base with only reserve fuel remaining. Range-free allowances are fuel for 5 minutes at normal power for take-off, and fuel for 30 minutes maximum endurance at sea level plus 5% of the initial fuel load for landing reserve.

GENERAL DATA:

(a) The landing reserve for the Basic Mission is equivalent to 800 nautical miles range at optimum speed and altitude.

(b) The following electronic equipment is supplemental to that shown under "Electronics" on page 3:

Glide Path Receiver

(1) AN/ARN-18

Marker Beacon

(1) AN/ARN-12

Early Warning

AN/APS-54

Chaff Dispenser

(1) AN/ALE-1

(c) O.W.E. increases approximately 2000 lb on B-52 airplanes utilizing J57-P-29WA engines resulting in a minor range decrease for a given T.O. Weight.

PERFORMANCE REFERENCE:

Boeing document D-15134B, "Substantiation Data Report - Models B-52B (J57-P-19W engines), B-52C and B-52D Standard Aircraft Characteristics Charts", dated 31 December 1956.

REVISION BASIS:

To incorporate latest flight test data.